

Abstract of the Invention

This invention concerns a gas assist mold dump valve positioned between a gas controller and a mold cavity. Preferably, the valve includes a pressure regulator having a body with a gas inlet and a gas outlet. A vent is formed in the body between the gas inlet and the gas outlet. The inlet is in fluid communication with the gas controller and the outlet is in fluid communication with the mold cavity. A piston is mounted for reciprocal motion within the body and is movable between a first position to close and a second position to open the vent. Finally, a check valve communicates with the inlet and the outlet and has an open position that allows gas to flow from the inlet to the outlet and a closed position to close off the flow of gas from the outlet to the inlet. In operation, gas entering the inlet urges the piston toward its first position, passes through the check valve into the outlet and then enters said mold cavity. Gas exiting the mold cavity urges the piston toward its second position to open the vent and expel the gas. This arrangement permits the controller to monitor mold cavity pressures without the flow of gas and contaminants from the mold cavity back through the controller.